

ABSTRACT

A method for time series-based localized predictive resource reservation for handoff in multimedia wireless networks models the amount of network resources $R(t)$ necessary to handoff a mobile terminal in a wireless IP network as an ARIMA $(p,1,q)$ process. An ARIMA $(p,1,q)$ process is a Weiner process wherein the future value of a stochastic variable depends only on its present value. The ARIMA $(p,1,q)$ process includes an autocorrelation component, wherein the future value of a stochastic variable is based on its correlation to past values, and a moving average component that filters error measurements in past variable observations. Each wireless IP base station determines its own ARIMA $(p,1,q)$ model and uses its model to locally predict the amount of network resources $R(t)$ it needs to reserve for the handoff of mobile terminals.